Space Weather Forecast

Issued on Saturday, 13 August 2022 at 13:10 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant activity.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity has been Low over the past 24 hours, but with an increasing number of Common-class flares during the period. There are currently 8 sunspot regions on the visible disc. The new region in the northeast grew significantly during the period and is now showing some magnetic complexity. This region, along with two other regions near centre disc, provide the main flare risk at the present time. That said, the recent Common-class flaring was well-spread between regions. There was little change evident in the remainder of the magnetically simple groups. No Earth-directed Coronal Mass Ejections (CMEs) were observed.

Solar Wind / Geomagnetic Activity: The solar wind is showing a waning fast wind environment at Earth. The wind speed was elevated over the past 24 hours, with a gradual decreasing trend from near or just below 600 km/s to just above 500 km/s. The Interplanetary Magnetic Field was weak throughout, with the north-south component varying weakly. Geomagnetic activity was Quiet (Kp 0-2).

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is likely to be at low levels, with a chance of moderate-class X-ray flares.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs feature in the current forecast. Earth is currently experiencing a waning coronal hole fast wind. This feature is considered to have long since peaked in terms of geomagnetism. Wind speeds are expected to slowly decline through the next 24-48 hours, likely becoming slow by the end of the period. There is a slight chance of an isolated Active interval at first should a prolonged southward directed magnetic field arrive while the solar wind is still elevated, however this too should decrease through the next 24 hours to leave a largely Quiet remainder of the forecast, perhaps with the odd Unsettled interval.

Energetic Particles / Solar Radiation: Solar radiation storms are unlikely, but there is a slight chance of an S1 or greater event due to the three more complex regions on the disc.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	30	30	30	30
Very Active	R3 to R5 X	No	2	2	2	2

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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